# Optical Conversion of Time-domain signal to WDM

HIGHLIGHTS

- Optical signal processor
- 10 to 100Gbps optical TDM signal
- n individual TDM channels @ xGbps
- Channel Count and Bandwidth are subject to specific product design
- N wavelengths WDM channels
- Optical conversion from TDM to WDM Ultra low latency
- Low power consumption
- Reduced cost and complexity

TimeLens
Optical
Signal
Processor

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TDM
n channels
x Gbps/channel

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WDM
n wavelengths
X Gbps/wavelength
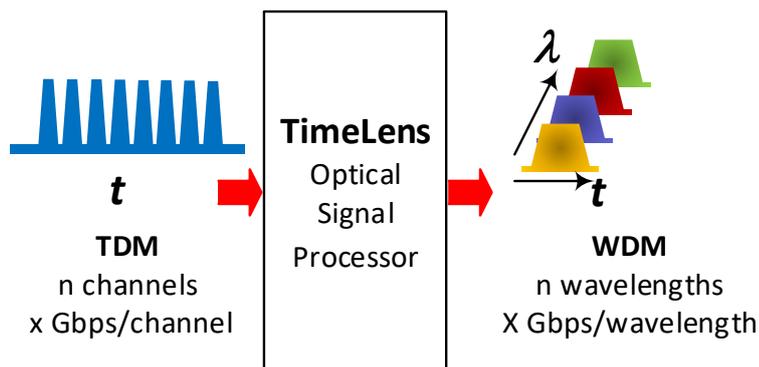
TimeLens is an optical signal processor, which converts a single wavelength optical TDM signal to a number of different optical signals, each with its unique wavelength. Compared to existing Wavelength Difference Multiplexing (WDM) optical communication systems, the TimeLens with its single laser source reduces complexity, energy consumption, and cost by more than 90% while increasing the efficiency (bandwidth and reach) significantly.

Applications

- Point-to-Multipoint networks
- FTTx – Fiber to the Home/Business
- Base-station to multiple antennas
- Optical Channel Splitter applications
- Automated Bandwidth Allocation systems

Technical Specifications

RX sensitivity, TDM input	-5 dBm OMA
Wavelengths	ITU C- or L-band
Latency, input to output	< 5 ns
TX output power	0...-5 dBm OMA per channel
Operating conditions	Temperature: 0 - 70°C Humidity: 5 - 85% R.H, non condensing
Power consumption	50 W (100 WDM ch.)

Solution examples

- 5G Fronthaul/midhaul networks

- Next generation 50G Passive Optical Networks (PON)

- High density WDM Passive Optical Networks (PON)

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Solution	5G Front-/midhaul Networks	Next generation 50G PON	High density WDM PON
TDM bandwidth	N x 25Gbps	50Gbps	10Gbps
TDM channel count	N	16	64
Per channel bandwidth	25Gbps	2.5Gpbs	125Mbps
# of Wavelengths	N	16	64
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